

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 17 SEP 2007

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Applicant's or agent's file reference 53047-48386	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/US04/16021	International filing date (day/month/year) 21 May 2004 (21.05.2004)	Priority date (day/month/year) 23 May 2003 (23.05.2003)	
International Patent Classification (IPC) or national classification and IPC IPC: G06F 1/00(2006.01) USPC: 707/1-10 & 100-104.1;709/225 & 229;713/190 & 191			
Applicant WASHINGTON UNIVERSITY			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>17</u> sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 06 January 2005 (06.01.2005)		Date of completion of this report 21 August 2007 (21.08.2007)	
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer JEAN B. FLEURANTIN Telephone No. 571-272-9000	

Form PCT/IPEA/409 (cover sheet)(April 2005)

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4(a))
- ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ the international application as originally filed/furnished
- ☒ the description:
pages 1-49 & 57 as originally filed/furnished
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☒ the claims:
pages 50-56 as originally filed/furnished
pages* _____ as amended (together with any statement) under Article 19
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☒ the drawings:
pages 1-28 & 47 as originally filed/furnished
pages* 29-46 received by this Authority on 09/23/2004
pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US04/16021**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims <u>20-23</u>	YES
	Claims <u>1-19</u>	NO
Inventive Step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-23</u>	NO
Industrial Applicability (IA)	Claims <u>1-23</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and Explanations (Rule 70.7)

Claims 1-19 lack novelty step under PCT Article 33(2) as being anticipated by EP 0887723 issued to Mark Louis Ciacelli ("Ciacelli").

As per claim 1, Ciacelli discloses "a method for securely sharing data with authorized parties, wherein the data to be shared is stored in a database (i.e., external storage device; see col. 4, lines 27-28) in a first encrypted format (i.e., CSS encrypted original data; see col. 4, lines 35-36), the method comprising providing a programmable logic device (i.e., central processing unit; see col. 4, lines 9-10) for connection to the database, wherein the programmable logic device is configured to receive a stream of encrypted data from the database (i.e., receiving encrypted; see col. 4, lines 19-23), decrypted the received encrypted data stream to create decrypted data (i.e., descrambling; see col. 4, lines 20-21), and encrypted the decrypted data in a second encrypted format (i.e., re-encrypted; see col. 6, lines 40-50); and sharing the data of the second encrypted format by communicating it to an authorized party (i.e., transferring; see col. 5, lines 6-8). Therefore, Ciacelli discloses all the claimed limitations.

As per claims 2-8 and 10-19, the limitations of claims 2-8 and 10-19 are similar to claims 1, 9 and 23, therefore, the limitations of claims 2-8 and 10-19 are rejected in the analysis of claims 1, 9 and 20 and these claims are rejected on that basis.

As per claim 9, the limitations of claim 9 are similar to claim 1, therefore, the limitations of claim 9 are rejected in the analysis of claim 1, and this claim is rejected on that basis.

Claims 20-23 lack inventive step under PCT 33(3) as being unpatentable over EP 0887723 issued to Mark Louis Ciacelli ("Ciacelli") in view of US Patent No. 5,943,421 issued to Grabon ("Grabon").

The subject matter of independent claim 20 differs from this known Ciacelli in that it provides a reconfiguration logic device and the second encrypted format is delivered to a requester. Both features are juxtaposed and merely represent design choices so that claim 20 lacks inventive step. And to provide reducing the number of required data transfers between ram and slower bulk storage devices; (see Grabon col. 1, lines 58-61).

As per claims 21-23, the limitations of claims 21-23 are similar to claims 1 and 20, therefore, the limitations of claims 21-23 are rejected in the analysis of claims 1 and 20, and these claims are rejected on that basis.

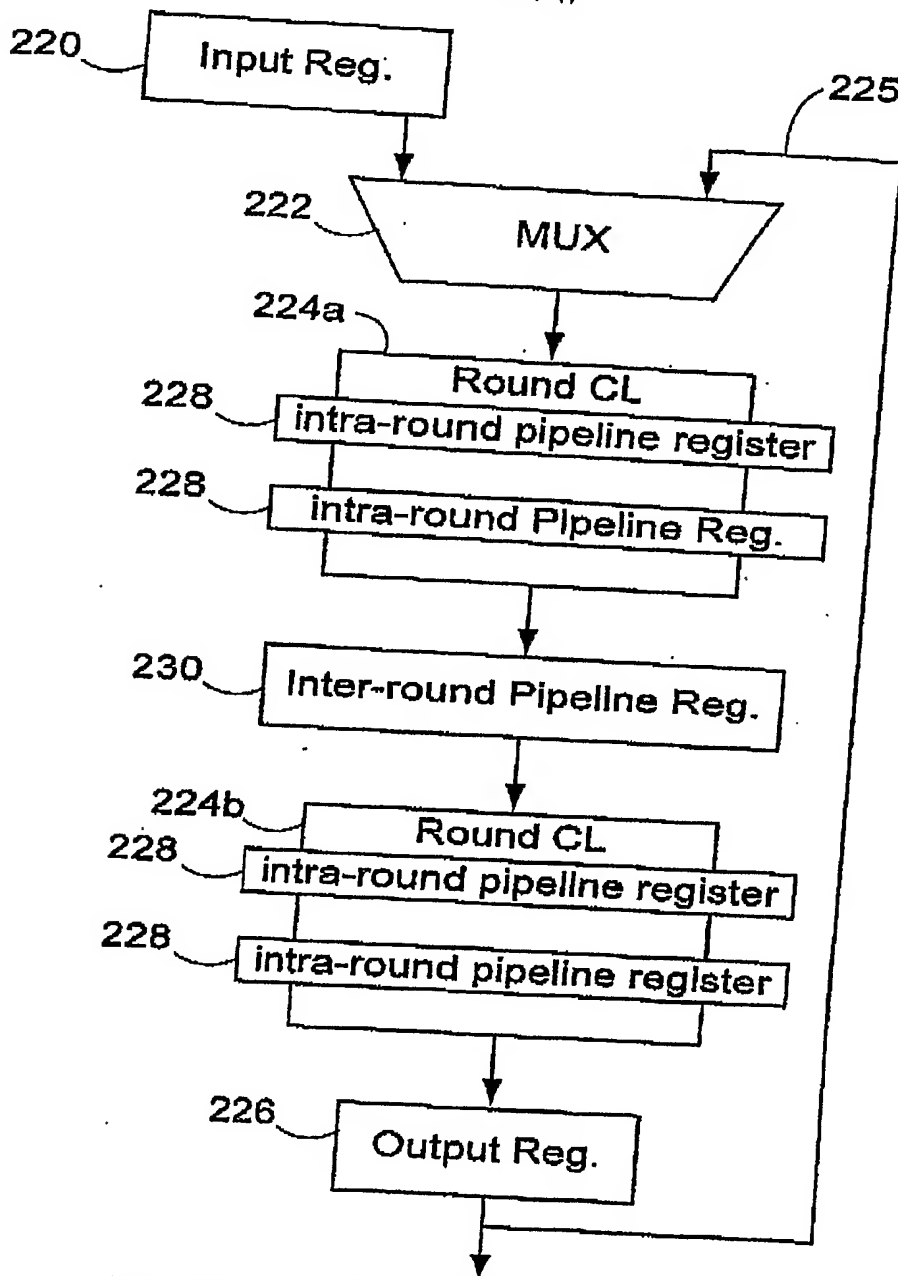
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Pipelined encryption/decryption engine.

Figure 34

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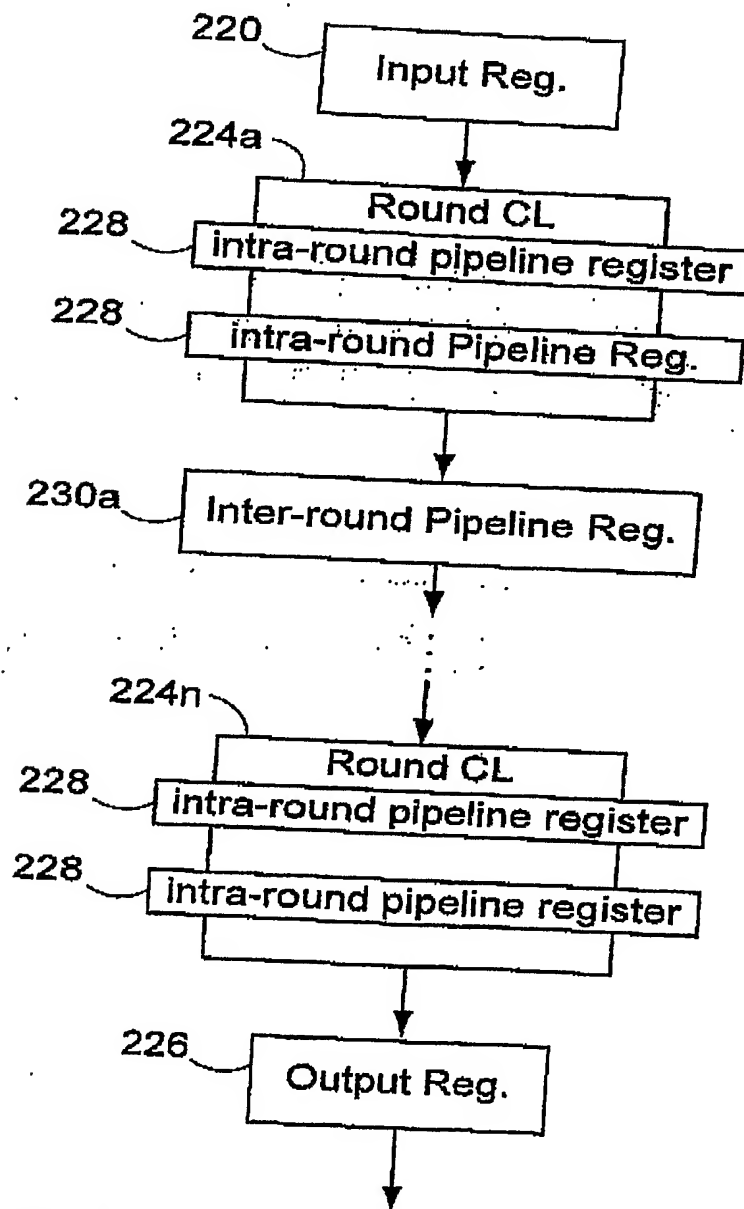
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Fully pipelined encryption/decryption engine.

Figure 35

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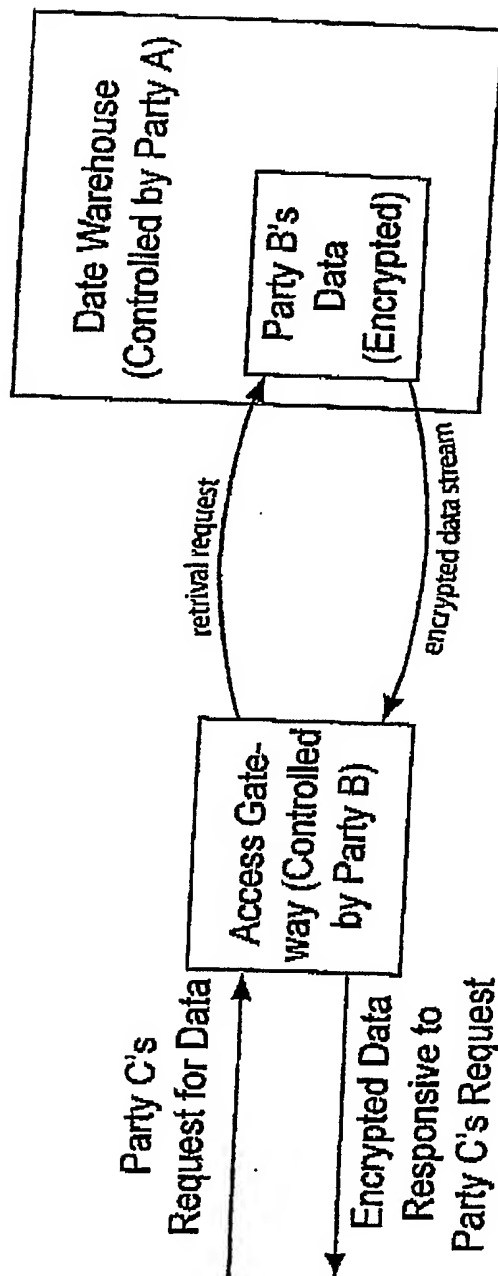


Figure 36

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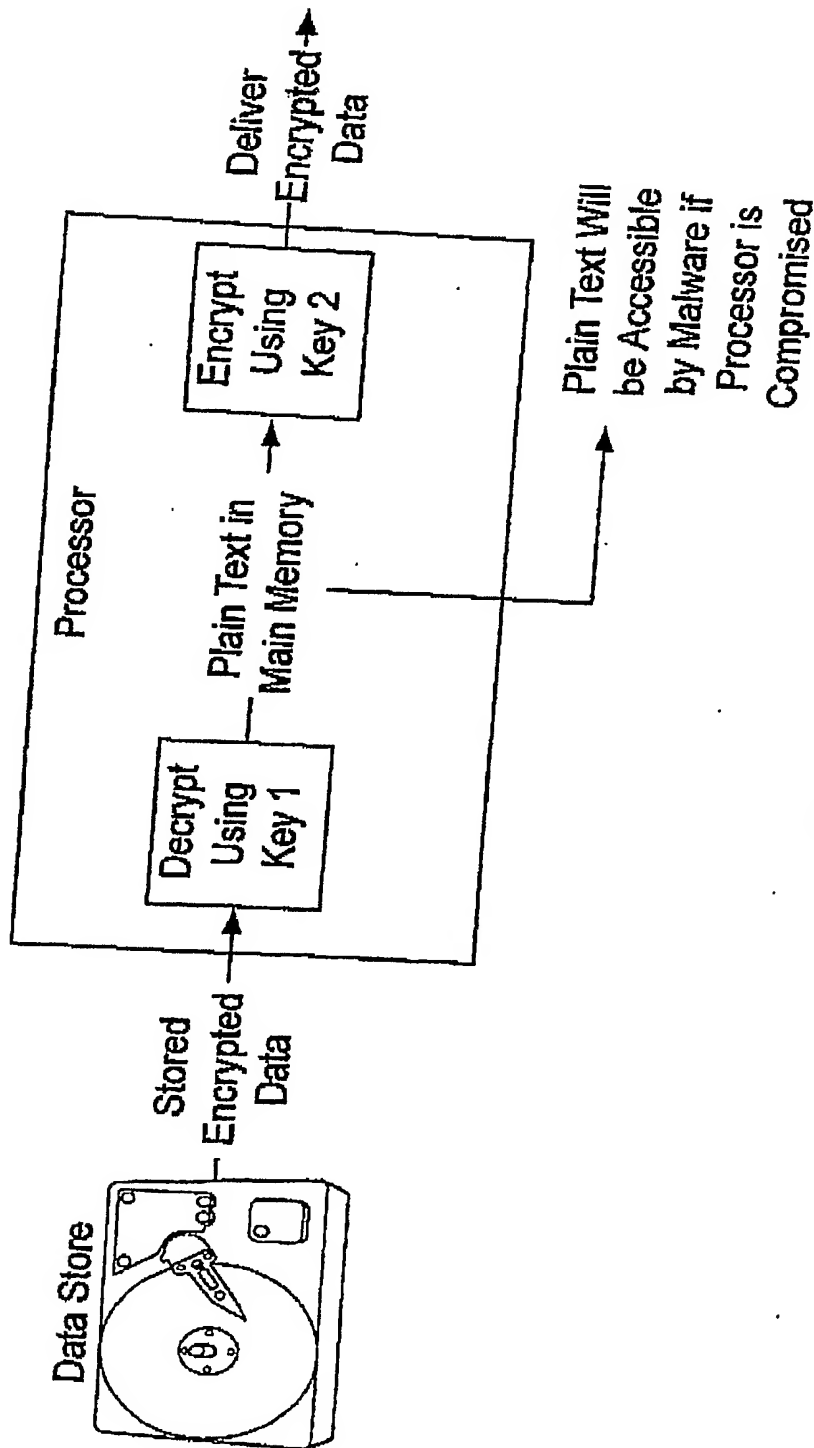


Figure 37

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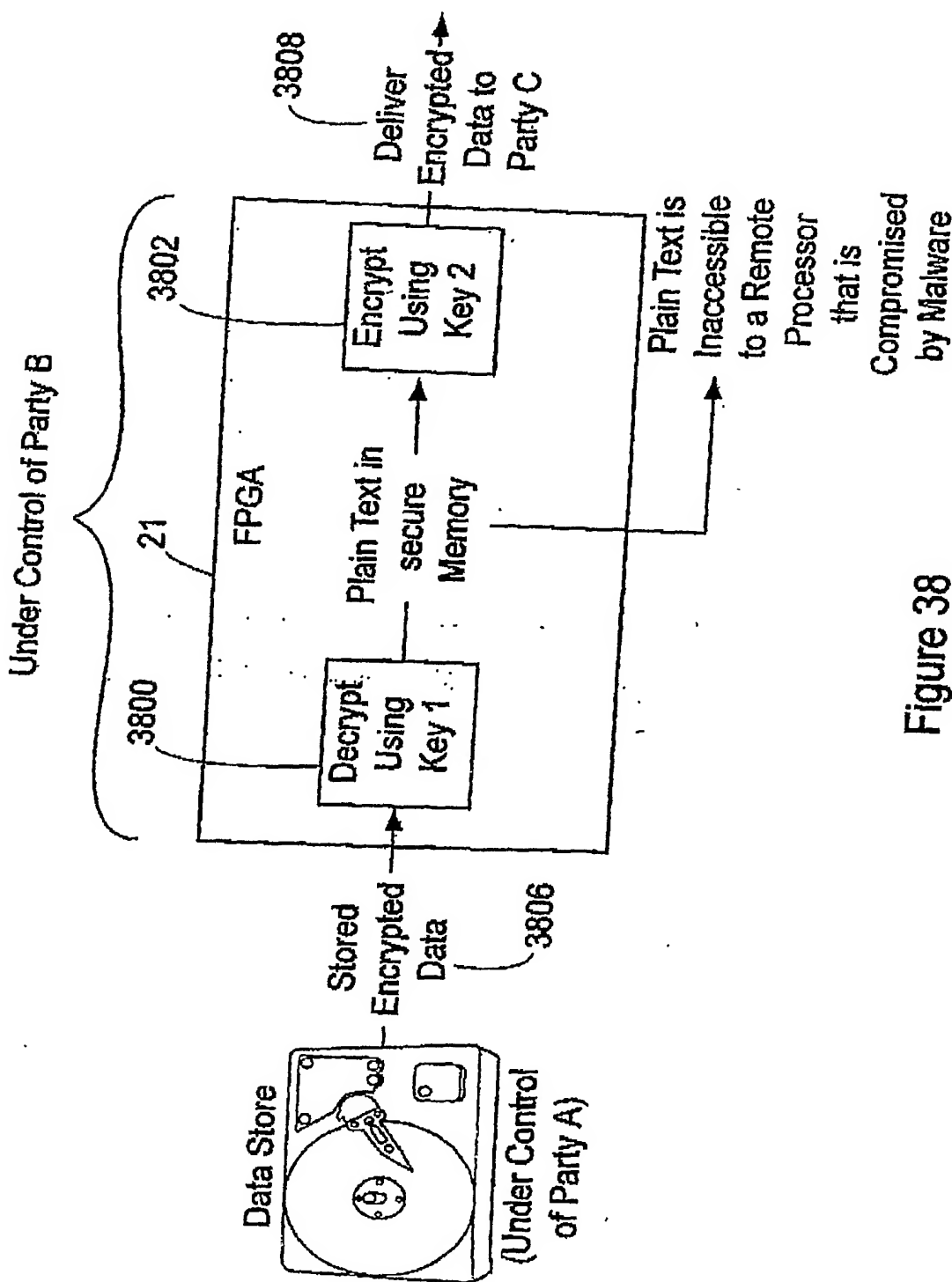


Figure 38

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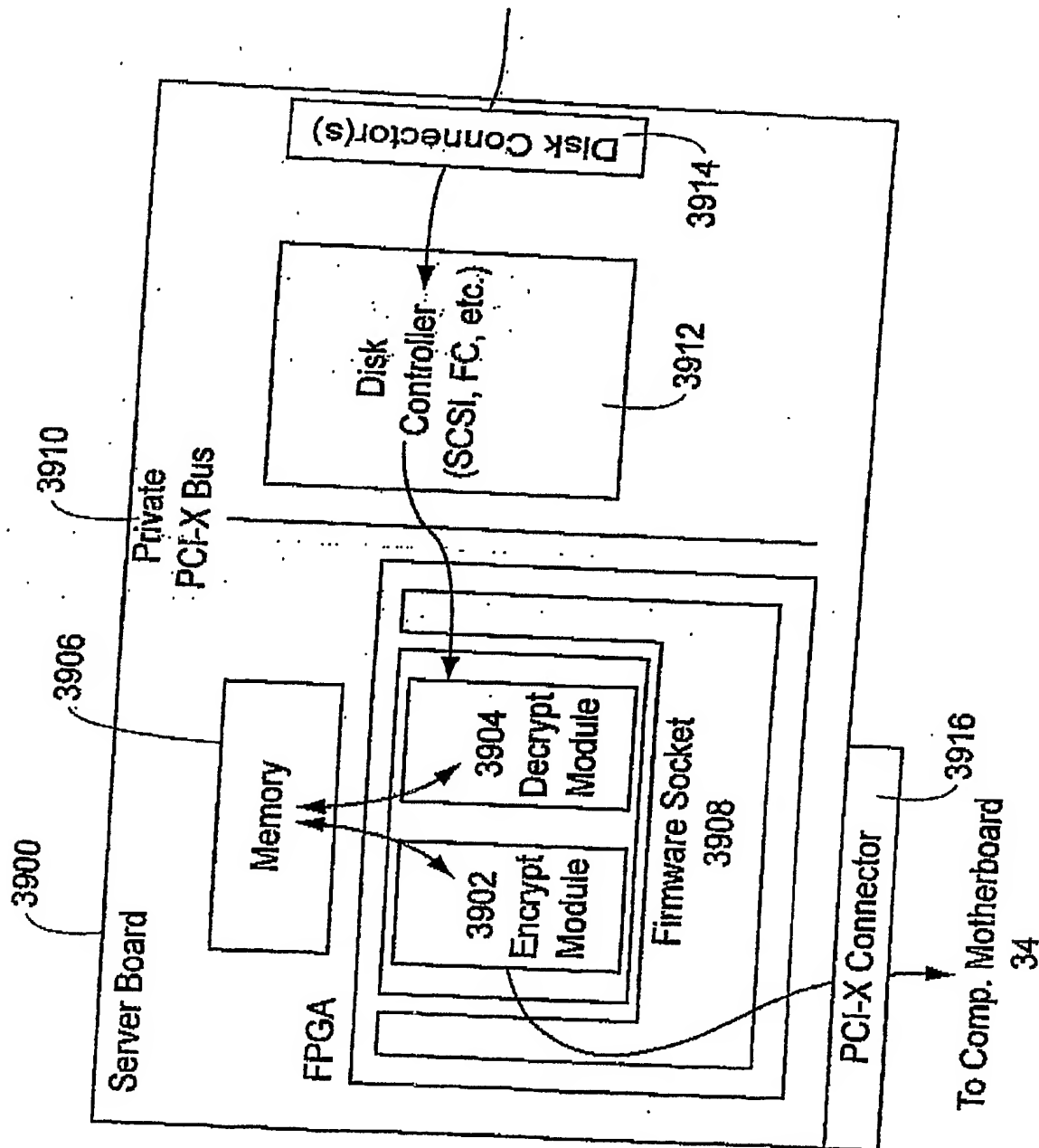


Figure 39(a)

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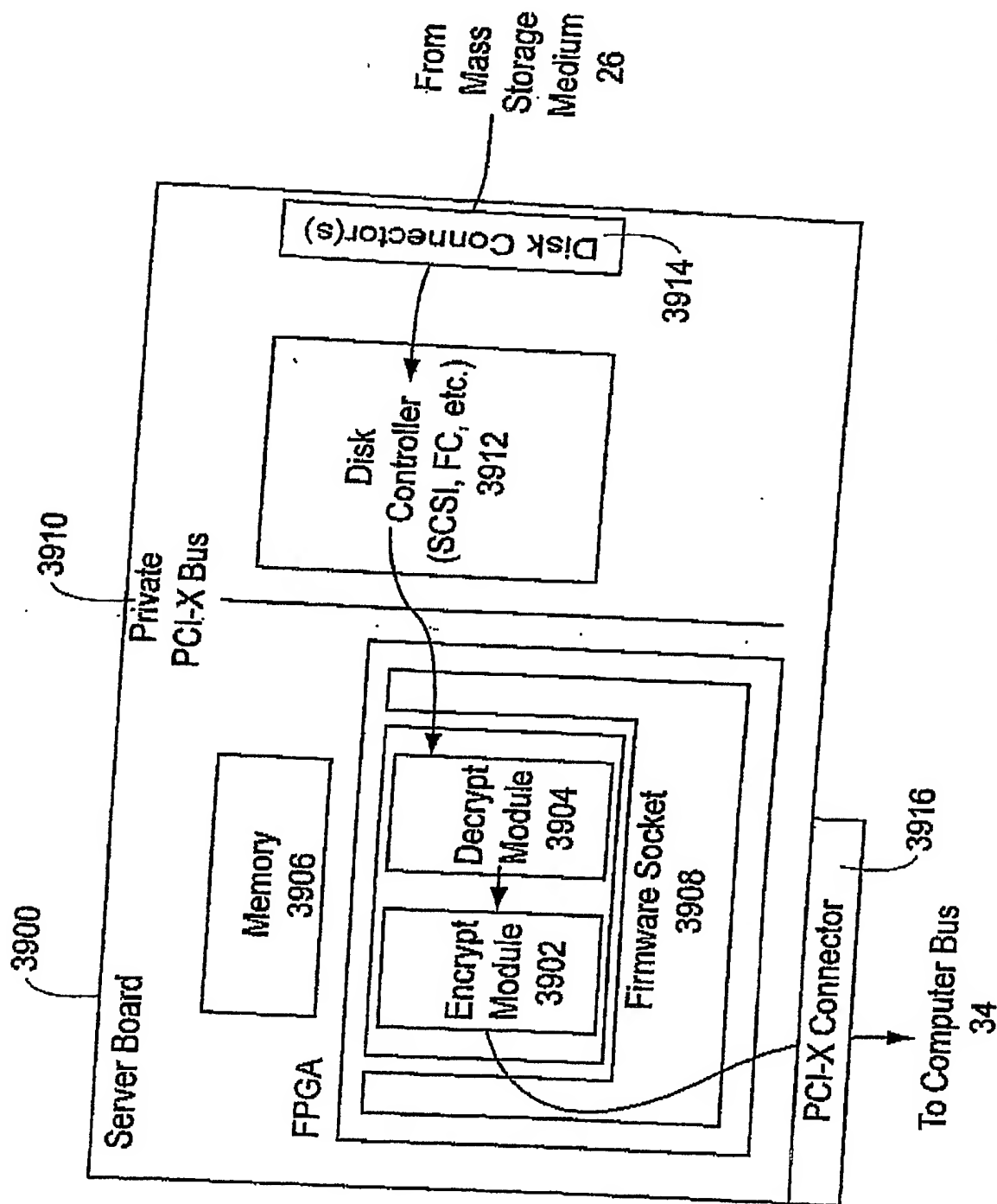


Figure 39(b)

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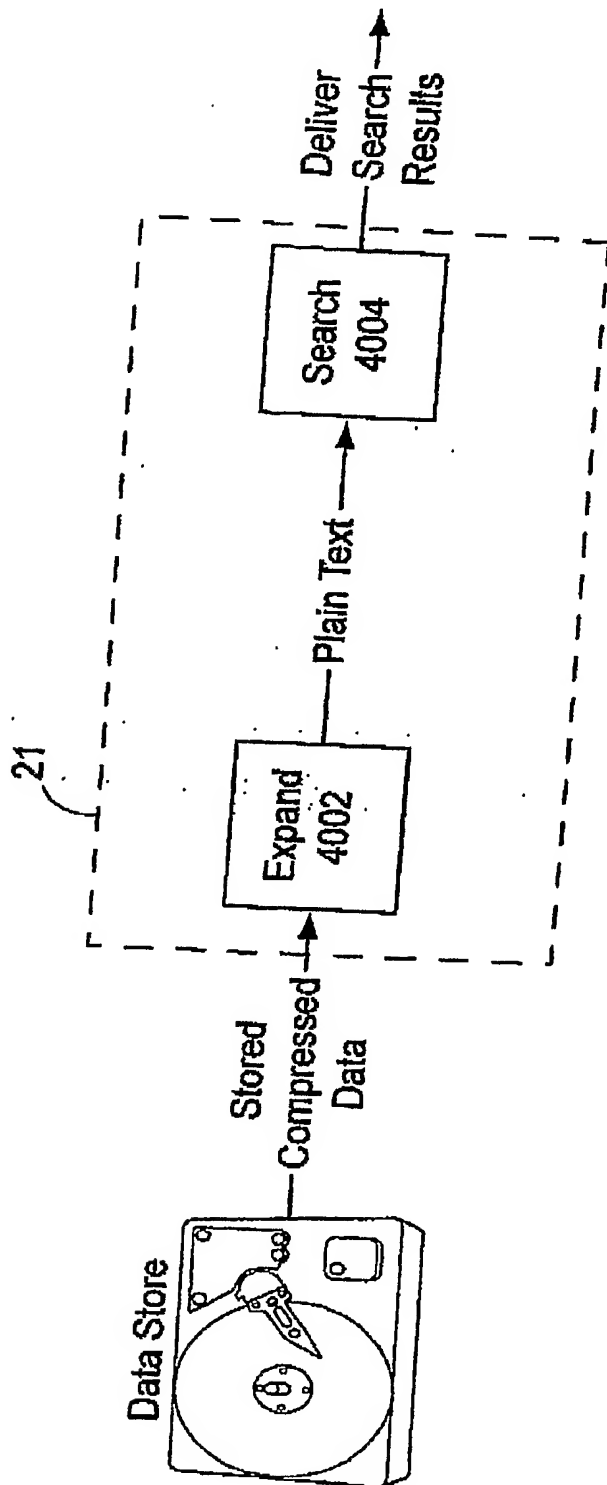


Figure 40

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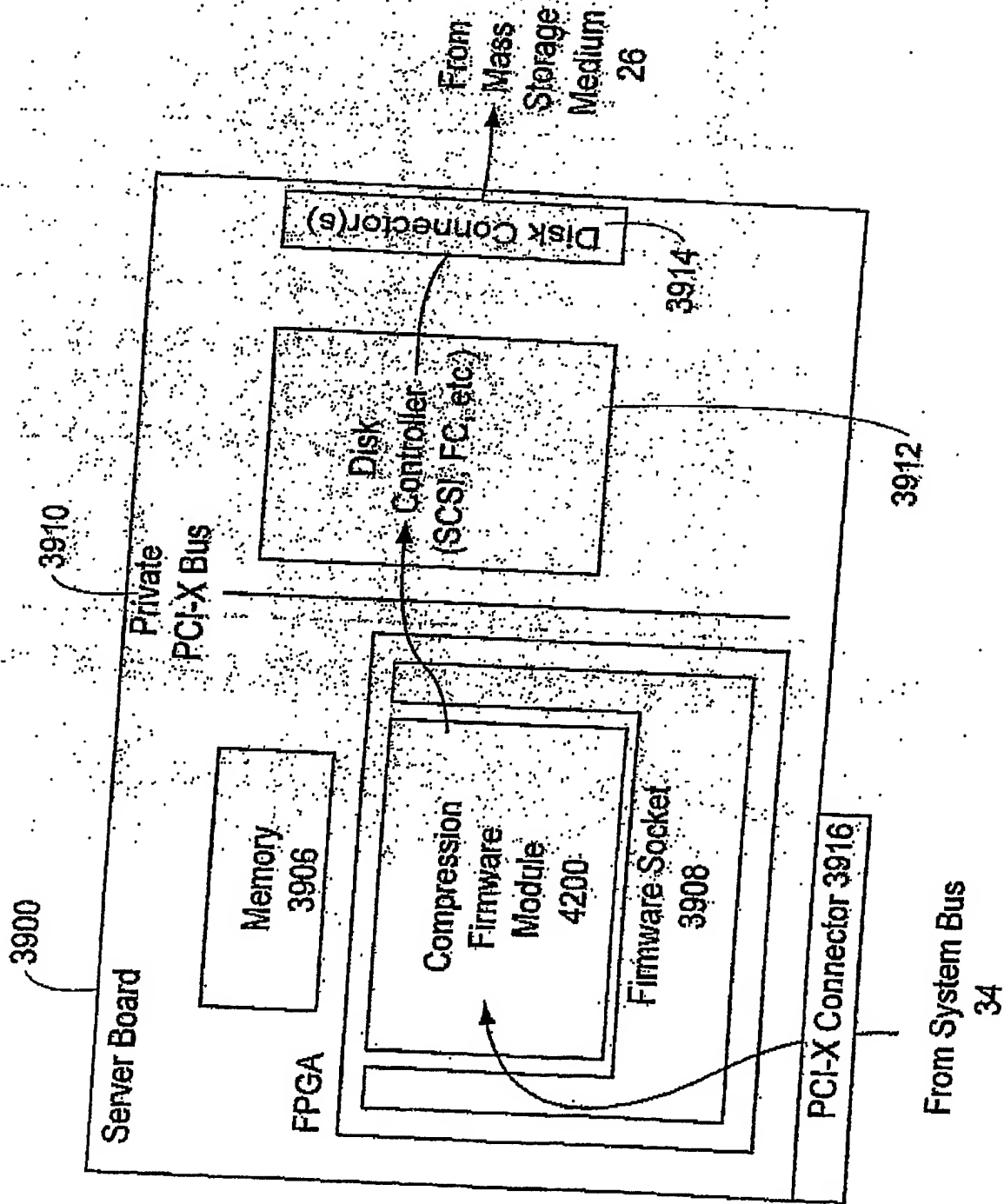


Figure 42

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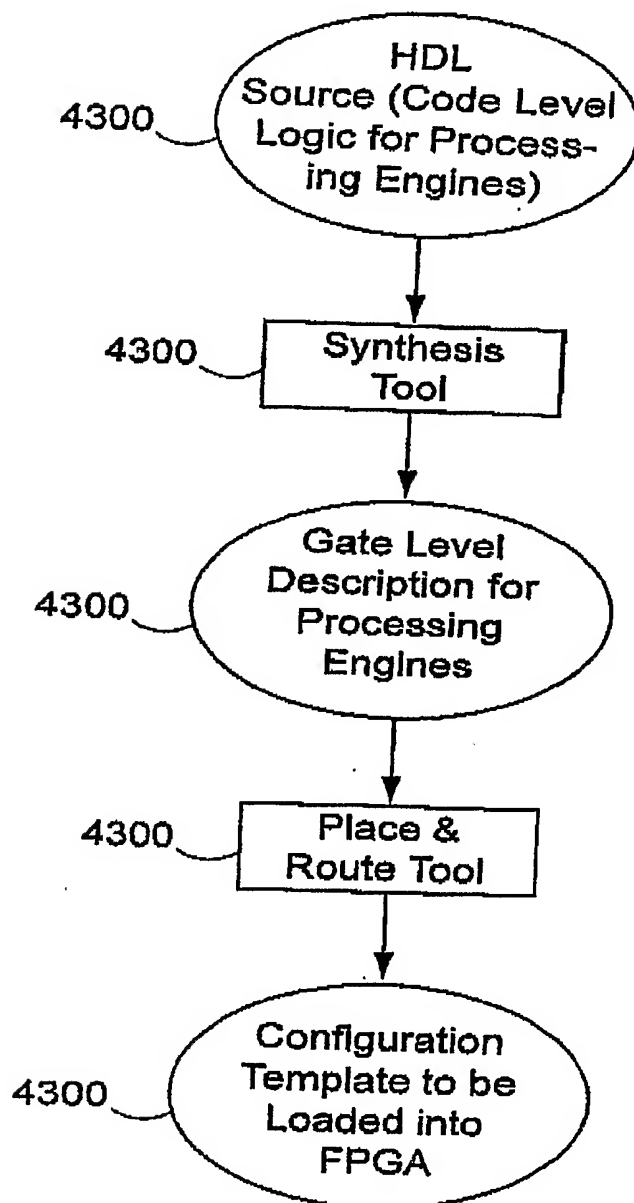


Figure 43

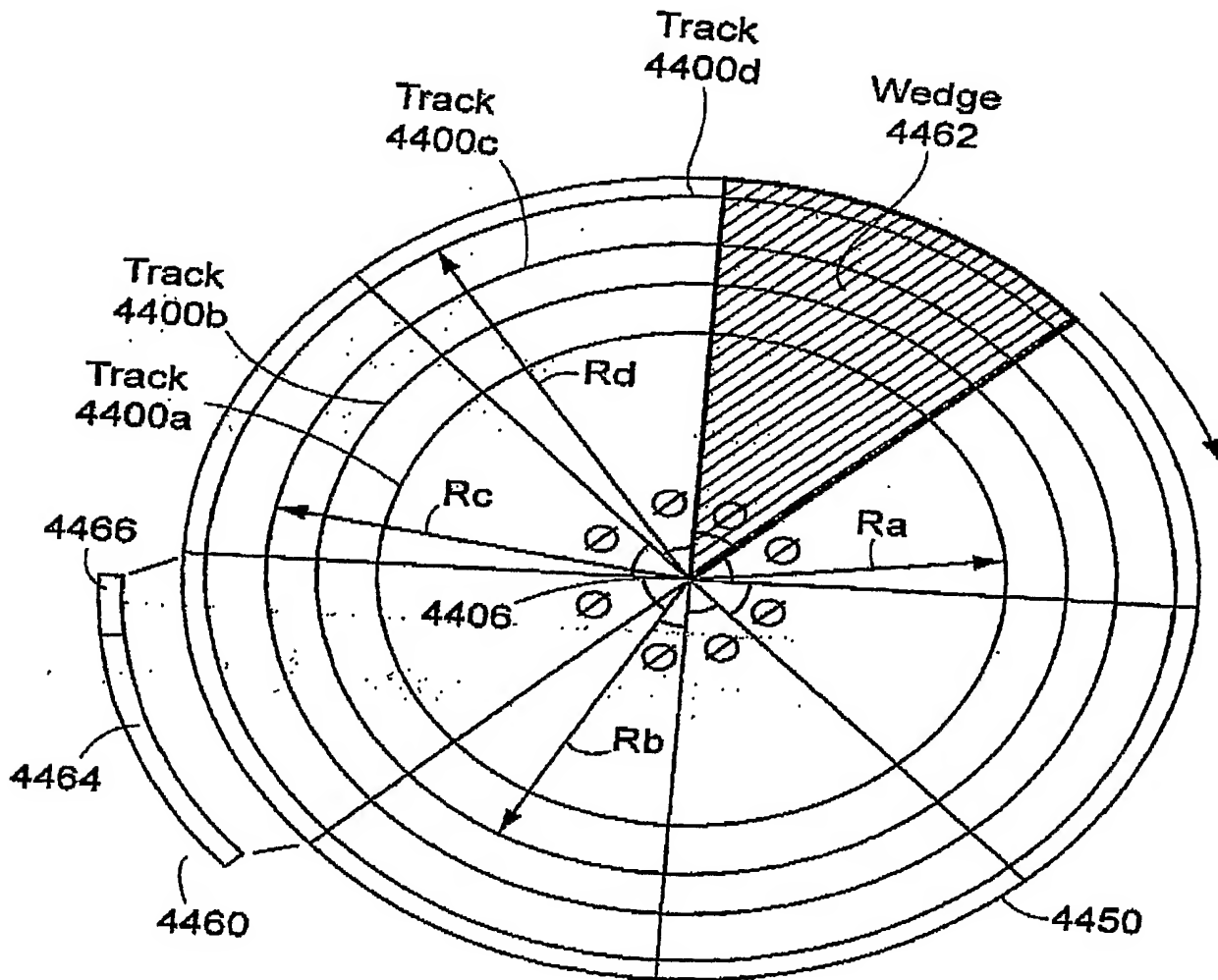
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$$\phi = \frac{2\pi}{W}; \quad W = \text{Total Number of Wedges}$$

PRIOR ART

Figure 44(a)

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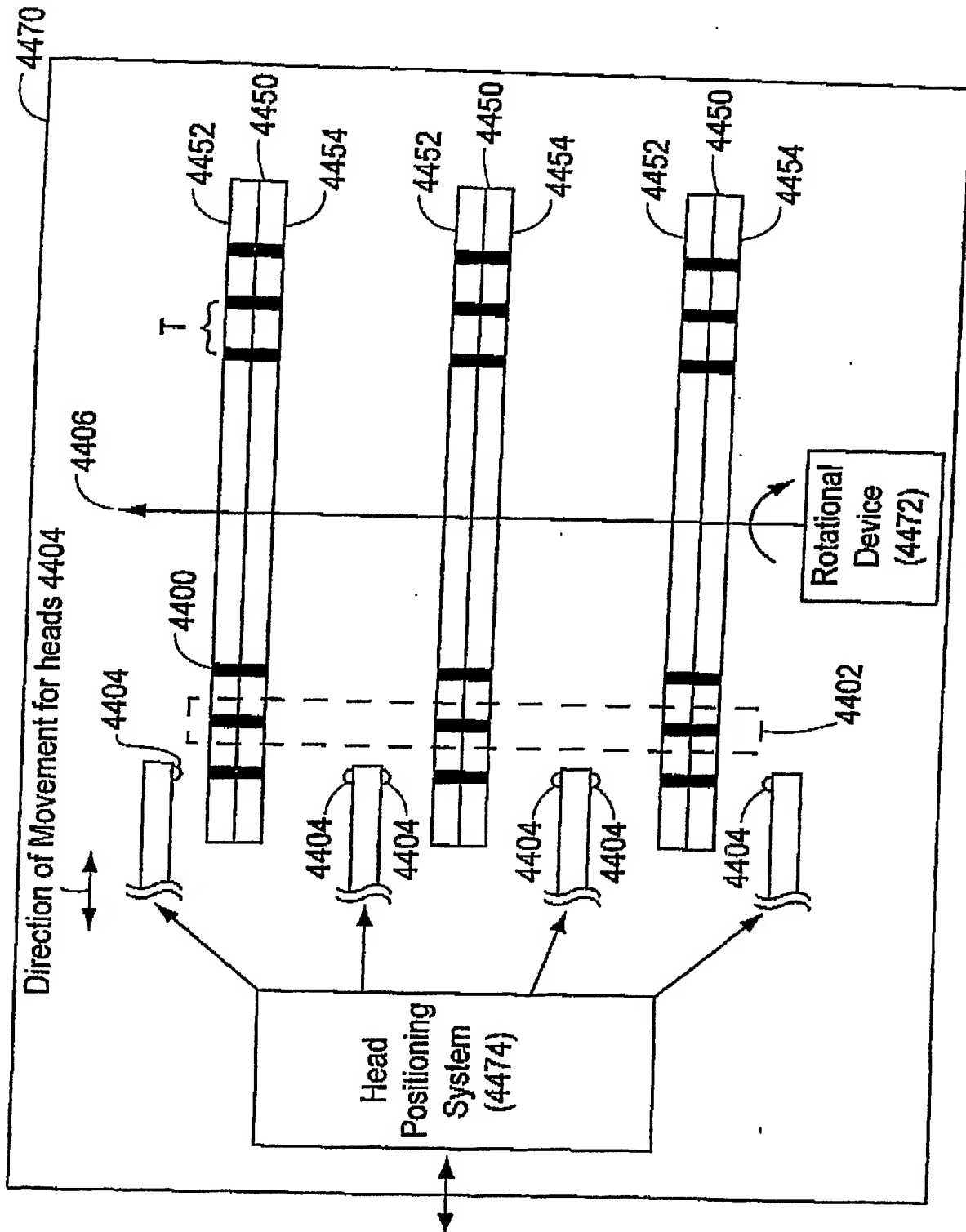


Figure 44(b)

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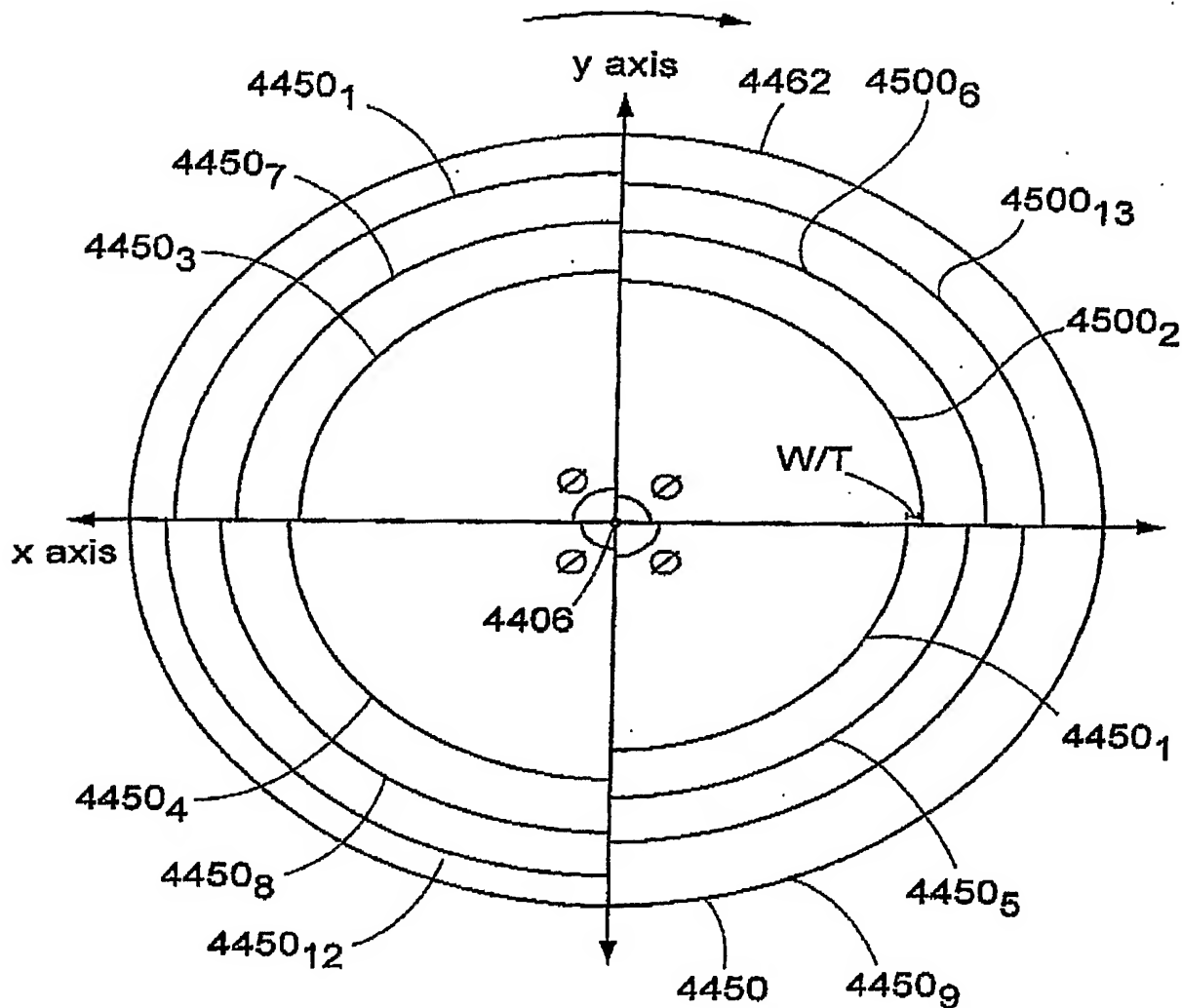


Figure 45

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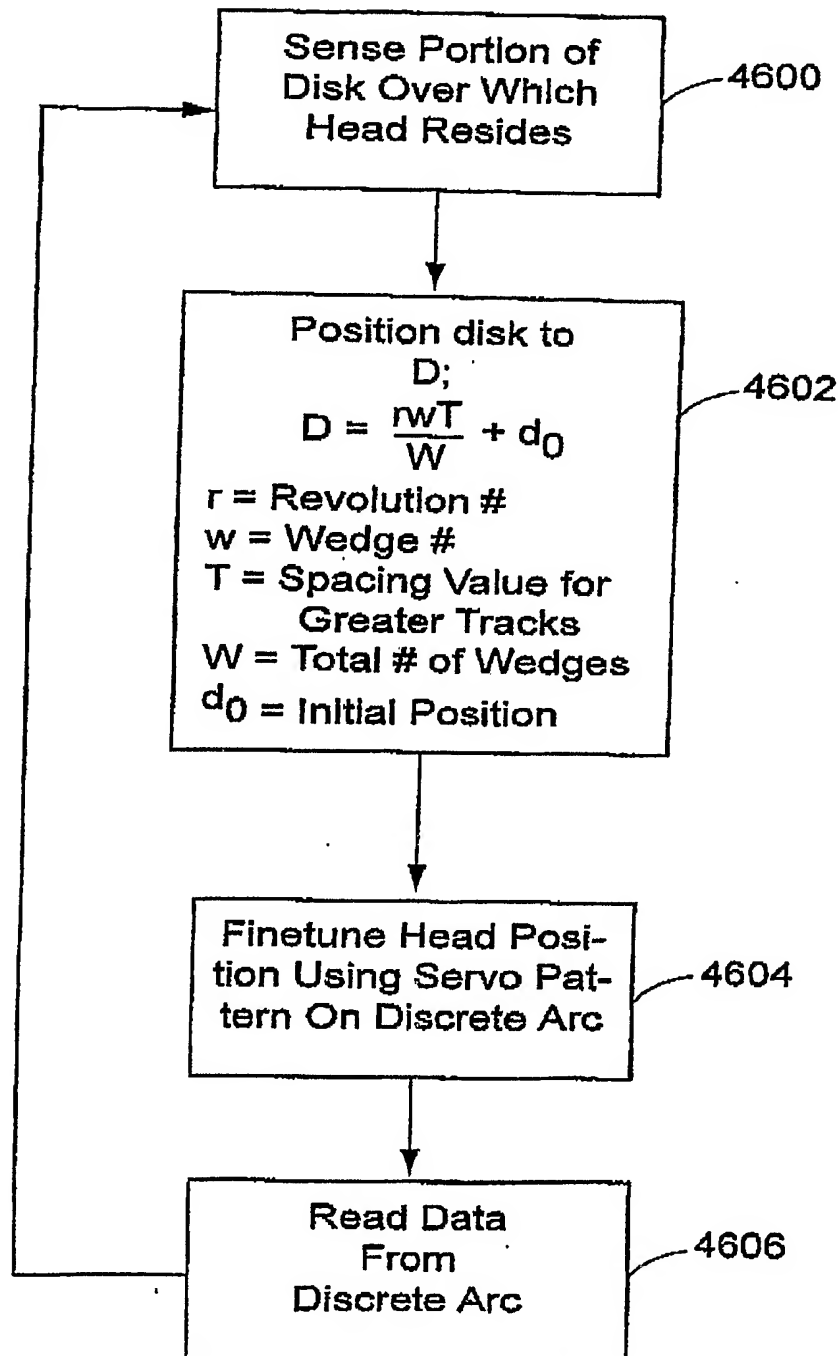


Figure 46

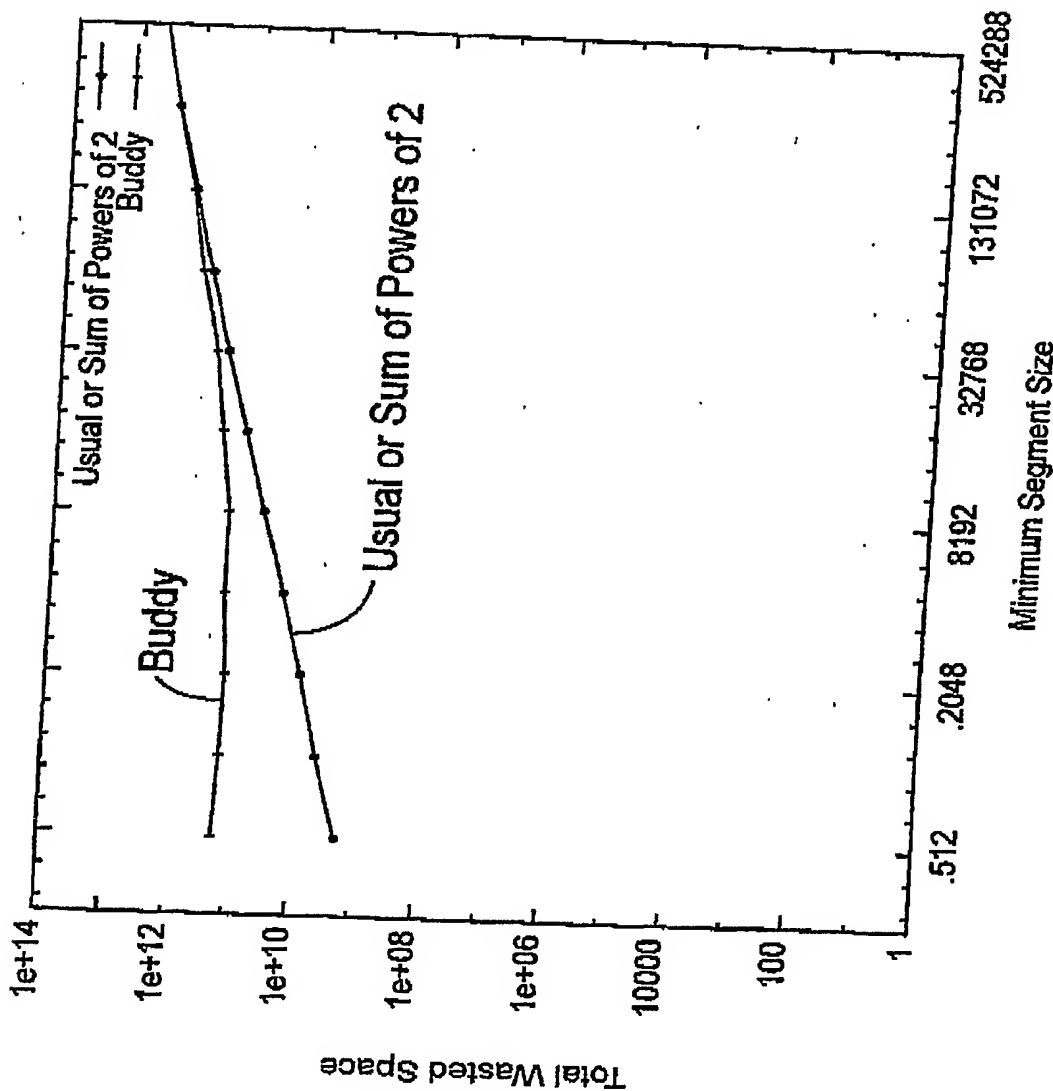
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Wasted storage due to internal fragmentation.

Figure 48

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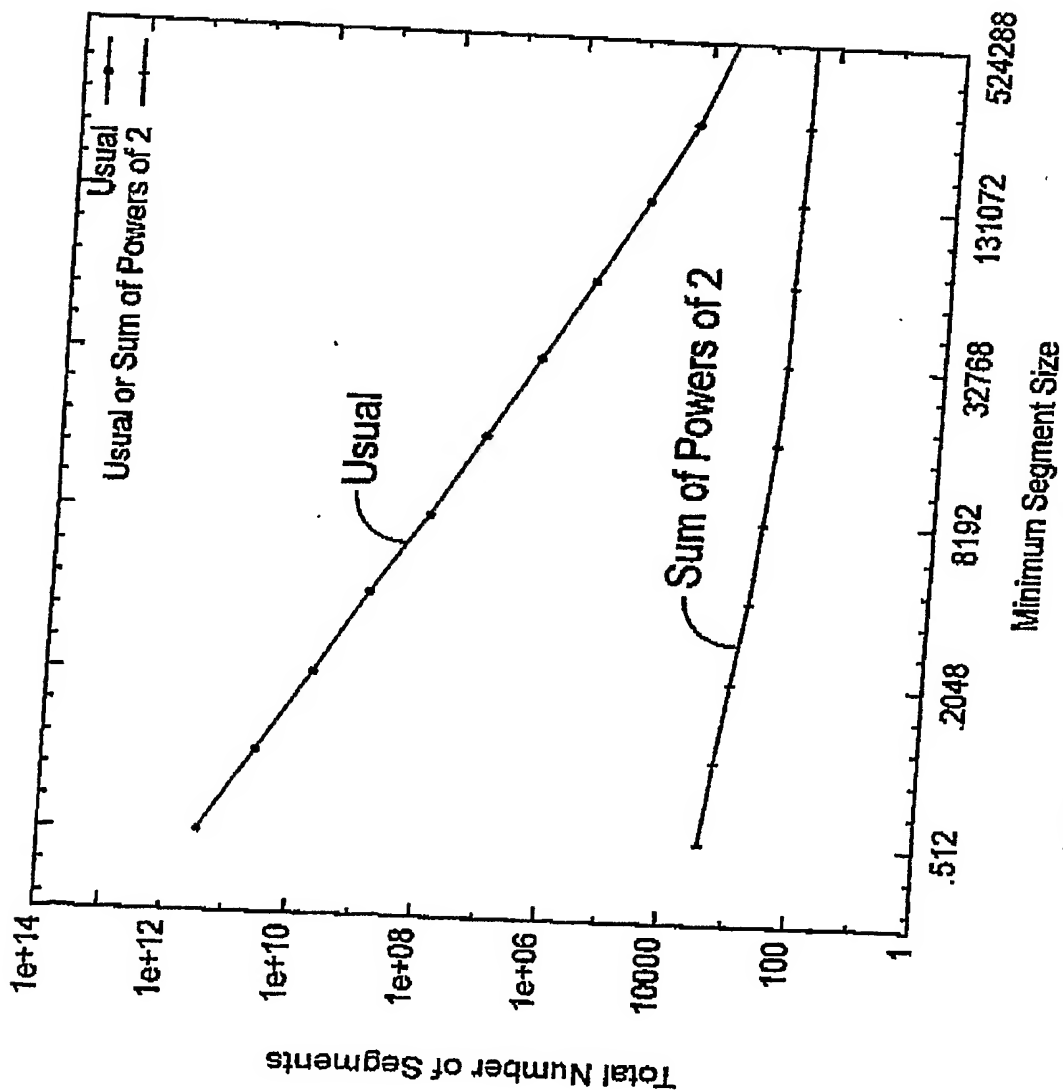
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Total number of segments in the file system.

Figure 49